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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/662,258	09/14/2000	Judith E. Schwabe	SUN-P4175	1082

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EXAMINER	
GODDARD, BRIAN D	
ART UNIT	PAPER NUMBER
2171	

DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/662,258	SCHWABE, JUDITH E.	
	Examiner	Art Unit	
	Brian Goddard	2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *04 March 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This communication is responsive to the Amendment filed March 4, 2003.

2. Claims 1-21 are pending in this application. Claims 1, 3, 5, 8, 10, 12, 15, 17 and 19 are independent claims. In the Amendment, claims 15-21 were added, and claims 3, 9-11, 13 and 14 were amended. This action is non-final.

Drawings

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on March 4, 2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

The Patent and Trademark Office no longer makes drawing changes. See 1017 O.G. 4. It is applicant's responsibility to ensure that the drawings are corrected. Corrections must be made in accordance with the instructions below.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings

after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. **Corrections other than Informalities Noted by Draftsperson on form PTO-948.**

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

Claim Objections

4. Claims 1-6, 8-13 and 15-20 are objected to because of the following informalities:

The word 'object-oriented' should be inserted between "said" and "library" in the third line of claim 1 in order to properly refer to the "object-oriented library" (of the preamble) through antecedent basis in the claim.

Claims 2-6, 8-13 and 15-20 also recite the limitation "said library" with lack of proper antecedent basis, similar to claim 1. Thus, the word 'object-oriented' should be inserted between "said" and "library" in each of claims 2-6, 8-13 and 15-20 as well.

The first "in" should be removed from the phrase "classes and interfaces in defined in said (object-oriented) library" in the third line of claim 3.

Similarly, the first "in" should be removed from the same phrase in claims 10 (line 5) and 17 (line 3).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-6, 8-13 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,408,665 to Fitzgerald in view of U.S. Patent No. 6,526,571 to Aizikowitz et al.

Referring to claim 1, Fitzgerald teaches a system and method for listing public elements in a library as claimed. See Figures 3-4 and the corresponding portions of Fitzgerald's specification for this disclosure. Refer also to claims 1 and 6 for more details of this disclosure. In particular, Fitzgerald teaches a method for representing an application programming interface (API) definition for a programming language library [260], said method comprising:

creating [Librarian 265 creates] a list [Standard Dictionary 360 (also 430): 'a list of the library's public symbols and module names' (Column 8, lines 51-59)] of public elements [library object modules (See Fig. 3B)] in said programming language library, each of said public elements including a sublist [Dependency List 445] of all public related elements for the element ['each module it needs' (Column 11, lines 17-25) See also Column 3, lines 13-25]; and

storing [stored in Library File 410 (See Fig. 4A)] said list.

Fitzgerald does not explicitly state that the library (260) is an object-oriented library as claimed. However, Fitzgerald does state that in the preferred embodiment, the programming language specific to the system is Borland C++. See column 5, lines 46-59 for this disclosure. C++ being an object-oriented language, this provides direct suggestion that Fitzgerald's library is an object-oriented library as claimed. Furthermore, one can infer that Fitzgerald's library is object-oriented because it stores objects. See Figures 3B-4A and the corresponding portions of Fitzgerald's specification for this disclosure.

Aizikowitz teaches a system and method similar to that of Fitzgerald, wherein a class dependency hierarchy is generated from an object oriented library. See Figures 1 & 2 and the corresponding portions of Aizikowitz' specification for this disclosure. In particular, Aizikowitz teaches the practice of creating a class hierarchy (CHG) for classes and interfaces of a Java package (object-oriented library).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Fitzgerald's method of creating a list of public elements reflecting their dependencies to the object-oriented library of Aizikowitz in order to derive the object-oriented library's dependency hierarchy in a list structure as claimed. One would have been motivated to do so because of the suggestions provided by Fitzgerald as above.

Referring to claim 2, the system and method of Fitzgerald in view of Aizikowitz as applied to claim 1 above discloses the invention as claimed. Aizikowitz' object-oriented library (as applied to Fitzgerald) is a Java package as claimed. See Figure 1 and

column 2, line 50 et seq. of Aizikowitz' specification for this disclosure. Furthermore, Aizikowitz' public elements (as applied to Fitzgerald) comprise classes and interfaces as claimed. See Figure 2; column 2, lines 58-59; and column 3, lines 40-46 of Aizikowitz' specification for this disclosure. Finally, Aizikowitz' public related elements (as applied to Fitzgerald) comprise public superclasses and public superinterfaces of said classes and said interfaces as claimed. See Figure 2 and column 7, lines 25-30 of Aizikowitz' specification, in light Fitzgerald's disclosure of the Dependency List in the combination above, for this disclosure.

Claims 3 and 4 are rejected on the same basis as claim 2 above. See the discussions regarding claims 1 and 2 above for the details of the disclosure of the claimed method and the detailed limitations as well.

Referring to claim 5, the system and method of Fitzgerald in view of Aizikowitz as applied to claim 1 above discloses the invention as claimed. See Figure 6 and the corresponding portion of Fitzgerald's specification for this disclosure. In particular, Fitzgerald (as modified by Aizikowitz) teaches a method for determining a program hierarchy, said method comprising:

receiving [Step 601] an application programming interface (API) definition file [Standard and Extended Dictionaries] for an object-oriented library, said API definition file including...[See the discussion regarding claim 1 above]; and

traversing the program hierarchy through the dependency list [See Fig. 6C].

Fitzgerald (as modified by Aizikowitz) does not explicitly teach the step of "indicating a first public element is a direct parent of a second public element" as

claimed. However, looking at the structure of Fitzgerald's (as modified by Aizikowitz) Extended Dictionary described above with regard to claims 1 and 2, one can infer that the direct parent of a specific module (public element) is represented in the sublist (dependency list) of that module, but is not represented in the sublist of any other modules listed in that module's sublist. In other words, in order to traverse Fitzgerald's (as modified by Aizikowitz) hierarchy, a first module's direct parent can be found by searching that first module's sublist to find the second module that is not listed in the sublist for any other module in the first module's sublist.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to program Fitzgerald's (as modified by Aizikowitz) system to traverse the Extended Dictionary's hierarchy to find a first module's direct parent by searching that first module's sublist to find the second module that is not listed in the sublist for any other module in the first module's sublist as claimed. One would have been motivated to do so because this method is easily inferred from the structure of the Extended Dictionary, and seems to be the only method for traversing the hierarchy possible.

Claim 6 is rejected on the same basis as claim 2 above, in light of the basis for claim 5. See the discussions regarding claims 1, 2 and 5 above for the details of this disclosure.

Claims 8-13 are rejected on the same basis as claims 1-6 respectively. See the discussions regarding claims 1-6 above for the details of this disclosure.

Claims 15-20 are rejected on the same basis as claims 1-6 respectively. See the discussions regarding claims 1-6 above for the details of this disclosure.

6. Claims 7, 14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald in view of Aizikowitz as applied to claims 5, 12 and 19 above, and further in view of U.S. Patent No. 5,974,255 to Gossain et al.

Referring to claim 7, the system and method of Fitzgerald in view of Aizikowitz as applied to claim 5 above does not explicitly disclose the steps of comparing two reconstructed program hierarchies and indicating an error when they are inconsistent as claimed. However, Aizikowitz does disclose the need to maintain integrity of the program hierarchy in order to maintain the signed and sealed status of the package. See the Background and Summary of the Invention sections of Aizikowitz' specification for this disclosure. This provides suggestion for examining the hierarchy of an API with an expected hierarchy to maintain consistency for the signed and sealed status.

Gossain discloses a method for testing the inheritance hierarchy of an object-oriented class structure by comparing the active hierarchy to a test hierarchy stored within the system. See the Figure and the Detailed Description of the Drawing section for this disclosure. Refer specifically to column 3, lines 6-14. Gossain teaches the two claimed steps as follows:

Comparing [step 18] a first program hierarchy [hierarchy of class under test (11)] with a second program hierarchy [test class hierarchy (12)]; and

Indicating an error [Column 3, lines 9-10] when said first program hierarchy is inconsistent ['when a difference between the current state and expected state...is detected' (Column 3, lines 7-8)] with said second program hierarchy.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gossain's method for testing class hierarchies into Fitzgerald's (as modified by Aizikowitz) system such that the system would compare the hierarchy reconstructed from an Extended Dictionary for one library with the hierarchy reconstructed from a test Extended Dictionary, and indicate an error when the two hierarchies were inconsistent. One would have been motivated to do so because of Aizikowitz' suggestion described above.

Claims 14 and 21 are each rejected on the same basis as claim 7 above. See the discussion regarding claim 7 for the details of this disclosure.

7. Claims 1-4, 8-11 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,230,314 to Sweeney et al. in view of Aizikowitz.

Referring to claim 1, Sweeney discloses a system and method for generating an object-oriented program inheritance listing. See Figures 3, 4 & 7 and the corresponding portions of Sweeney's specification for this disclosure. In particular, Sweeney teaches a method for representing an application programming interface (API) definition for an object-oriented program, said method comprising:

creating [Steps 703-707] a list [Class Hierarchy (See Fig. 3 and column 3, line 59 – column 4, line 4)] of public elements [set of classes] in said object-oriented program,

each of said public elements ['for every class' (column 4, line 2)] including a sublist of all public related elements ['the set of base classes it inherits from is specified' (column 4, lines 2-3)] for the element; and

storing said list [See column 19, lines 56-62].

Sweeney does not explicitly disclose that the object-oriented program used for generating the class hierarchy is an object-oriented library as claimed. However, Sweeney does disclose the use and importance of object-oriented libraries in the background of the invention section (See column 1, lines 11-24). This provides suggestion for applying Sweeney's method to an object-oriented library.

Aizikowitz teaches a system and method similar to that of Sweeney, wherein a class dependency hierarchy is generated from an object oriented library. See Figures 1 & 2 and the corresponding portions of Aizikowitz' specification for this disclosure. In particular, Aizikowitz teaches the practice of creating a class hierarchy (CHG) for classes and interfaces of a Java package (object-oriented library).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Sweeney's method of creating a list of public elements reflecting their dependencies to the object-oriented library of Aizikowitz in order to derive the object-oriented library's dependency hierarchy in a list structure as claimed. One would have been motivated to do so because of the suggestions provided by Sweeney as above.

Referring to claim 2, the system and method of Sweeney in view of Aizikowitz as applied to claim 1 above discloses the invention as claimed. Aizikowitz' object-oriented

library (as applied to Sweeney) is a Java package as claimed. See Figure 1 and column 2, line 50 et seq. of Aizikowitz' specification for this disclosure. Furthermore, Aizikowitz' public elements (as applied to Sweeney) comprise classes and interfaces as claimed. See Figure 2; column 2, lines 58-59; and column 3, lines 40-46 of Aizikowitz' specification for this disclosure. Finally, Aizikowitz' public related elements (as applied to Sweeney) comprise public superclasses and public superinterfaces of said classes and said interfaces as claimed. See Figure 2 and column 7, lines 25-30 of Aizikowitz' specification, in light Sweeney's disclosure of the Dependency List in the combination above, for this disclosure.

Claims 3 and 4 are rejected on the same basis as claim 2 above. See the discussions regarding claims 1 and 2 above for the details of the disclosure of the claimed method and the detailed limitations as well.

Claims 8-11 are rejected on the same basis as claims 1-4 respectively. See the discussions regarding claims 1-4 above for the details of this disclosure.

Claims 15-18 are rejected on the same basis as claims 1-4 respectively. See the discussions regarding claims 1-4 above for the details of this disclosure.

Response to Arguments

8. Applicant's arguments, see pages 13-18, filed March 4, 2003, with respect to the rejection of claim 1 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a broader interpretation of the Fitzgerald

reference (cited as relevant prior art in the first Office action), as well as the newly found Aizikowitz and Sweeney references.

9. Applicant's arguments with respect to claims 2-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The article entitled "Applying Program Dependence Analysis to Java Software" by Zhao is considered pertinent to applicant's claimed invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goddard whose telephone number is 703-305-7821. The examiner can normally be reached on M-F, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

bdg
May 14, 2003

SAFET METJAHIC
SUPERVISORY PATENT EXAMINER
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